

=> d 113 1-4 abs,bib

L13 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN
AB Use of a beam of biradicaloid such as dialkyl group-III nitrene produced by the photodissocn. of energetic compound beams (PDECb) is expected to be advantageous to the low-temperature thin-film growth of stoichiometric **group-III nitrides**. Through the clarification of fundamental processes involved in pyrolysis as well as photolysis of dimethylgallium azide [(CH₃)₂GaN₃], dimethylaluminum azide [(CH₃)₂AlN₃], and dimethylboron azide [(CH₃)₂BN₃] based on post-SCF ab initio MO methods, the authors discuss the suitability of these possible source compds. for the production of beams of dimethylgallium nitrene [(CH₃)₂GaN], dimethylaluminum nitrene [(CH₃)₂AlN], and dimethylboron nitrene [(CH₃)₂BN] by the PDECb method. The theor. results suggested that (CH₃)₂GaN₃ is a promising PDECb source material in that this mol. possesses the nature of unimol. metastable dye.

AN 2002:356659 HCAPLUS

DN 137:192613

TI Ab initio molecular orbital characterization of dimethyl **group-III azides** as sources for photolytic production of free radical beams

AU Hayashi, Keiji; Kanayama, Takuo; Shimizu, Toyohiro; Kawamura, Yasunori; Kameko, Kenji; Kawakita, Seiji

CS Advanced Materials Science R&D Center, Kanazawa Institute of Technology, Yatsukaho, Matto, Ishikawa, 924-0838, Japan

SO Journal of Vacuum Science & Technology, A: Vacuum, Surfaces, and Films (2002), 20(3), 995-998

CODEN: JVTAD6; ISSN: 0734-2101

PB American Institute of Physics

DT Journal

LA English

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 4 USPATFULL on STN

AB The present invention provides a method for producing **Group III nitride** materials by converting a **Group III azide** of the formula:(R.¹R.²N).₂M.¹N.₃under conditions sufficient to produce a **Group III nitride** material of the formula:M.¹N

wherein

each of R.¹ and R.² is independently a hydrocarbyl; andM.¹ is a **Group III** metal.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2005:78449 USPATFULL

TI Methods for producing **group III nitride** materialsIN Arent, Douglas Jay, Conifer, CO, UNITED STATES
Curtis, Calvin J., Lakewood, CO, UNITED STATES

Schwerdtfeger, Carl Richard, JR., Chagrin Falls, OH, UNITED STATES

PI US 2005066878 A1 20050331

AI US 2003-671840 A1 20030925 (10)

DT Utility

FS APPLICATION

LREP FAEGRE & BENSON LLP, PATENT DOCKETING, 2200 WELLS FARGO CENTER, 90 SOUTH 7TH STREET, MINNEAPOLIS, MN, 55402-3901

CLMN Number of Claims: 30

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 491

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 3 OF 4 USPATFULL on STN

AB There are disclosed bisamido azides of gallium (Ga), aluminum (Al), or Indium (In) which when pyrolyzed in accordance with the invention, produce metal nitride films on a substrate. A representative example of a bisamido azide is bisdimethylamidogallium azide, (CH₃sub.3)N₂sub.2 GaN sub.3.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 97:91680 USPATFULL

TI Bisamido azides of gallium, aluminum and indium and their use as precursors for the growth of nitride films

IN Neumayer, Deborah Ann, Danbury, CT, United States
Lakhotia, Vikas, Portland, OR, United States

PA Board of Regents, The University of Texas System, Austin, TX, United States (U.S. corporation)

PI US 5675028 19971007

AI US 1995-520680 19950829 (8)

DT Utility

FS Granted

EXNAM Primary Examiner: Nazario-Gonzalez, Porfirio

LREP Arnold, White & Durkee

CLMN Number of Claims: 13

ECL Exemplary Claim: 1,5

DRWN No Drawings

LN.CNT 453

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L13 ANSWER 4 OF 4 USPATFULL on STN

AB A method for forming metal nitride films is provided comprising employing the techniques of chemical vapor deposition to thermally decompose a vapor comprising a dialkyl (Group III metal) azide, so as to deposit a film of the corresponding metal nitride on the surface of a substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 89:41035 USPATFULL

TI Process for metal nitride deposition

IN Gladfelter, Wayne L., St. Paul, MN, United States
Mantell, Daniel R., Minneapolis, MN, United States

Evans, John F., Minneapolis, MN, United States

Schulze, Roland K., Minneapolis, MN, United States

PA Regents of the University of Minnesota, Minneapolis, MN, United States (U.S. corporation)

PI US 4832986 19890523

AI US 1987-69714 19870706 (7)

DT Utility

FS Granted

EXNAM Primary Examiner: Childs, Sadie

LREP Merchant, Gould, Smith, Edell, Welter & Schmidt

CLMN Number of Claims: 6

ECL Exemplary Claim: 1

DRWN 5 Drawing Figure(s); 5 Drawing Page(s)

LN.CNT 381

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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=> dhis

DHIS IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=> d his

(FILE 'HOME' ENTERED AT 12:56:35 ON 05 DEC 2005)

FILE 'STNGUIDE' ENTERED AT 12:56:39 ON 05 DEC 2005

FILE 'HOME' ENTERED AT 12:56:46 ON 05 DEC 2005

FILE 'HCAPLUS, INSPEC, JAPIO, USPATFULL, USPAT2' ENTERED AT 12:56:59 ON 05 DEC 2005

L1 458730 S (NITRIDE)
L2 156 S (AZIDE) (8A) (DEPOSIT?)
L3 529759 S (LIGAND#)
L4 0 S (NETAL(W)AZIDE#)
L5 204995 S (METAL(W) ION#)
L6 223565 S (METAL(W) SALT#)
L7 4722 S (GROUP(W)III) (8A) (NITRIDE#)
L8 26 S (GROUP(W)III) (8A) (AZIDE#)
L9 14 S L7 AND L8
L10 49687 S (HYDROCARBYL)
L11 2 S L9 AND L10
L12 1996546 S (DEPOSIT?)
L13 4 S L9 AND L12

=>

L11 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2005 ACS on STN
AB A method is provided for producing **Group III** nitride materials by converting a Group IIIA azide of the formula $(R_1R_2N)2M_1N_3$ under conditions sufficient to produce a **Group III nitride** material of the formula M_1N wherein each of R_1 and R_2 is independently a **hydrocarbyl** and M_1 is a Group III metal. Conversion of the Group IIIA metal azide to the Group IIIA metal nitride comprises decomposition of the azide moiety, which may be achieved by such methods as thermal decomposition or photolysis. In one embodiment, a method comprises a fluid medium-based crystal growth of the Group IIIA nitride. The Group IIIA azide is prepared by reacting a Group IIIA metal salt $M_1(X_1)_3$ (X_1 = ligand, e.g., halide) with a Group IIIA metal amide $(R_1R_2N)2M_1X_1$, then reacting the latter with a metal azide M_2N_3 (e.g., NaN_3 , LiN_3 , KN_3 , NH_4N_3) to give the Group IIIA azide. Thus, a GaN seed is placed in a boron nitride crucible with triglyme and purged with N_2 . Air-free bis(dimethylamido)gallium azide in triglyme is added by syringe, and the reaction is heated to 260° for 4 h. The reaction mixture is cooled at a rate of 19 h to 25° to afford crystalline GaN.

AN 2005:281391 HCAPLUS
DN 142:347510
TI Methods for producing **Group III nitride** materials
IN Arent, Douglas Jay; Curtis, Calvin J.; Schwerdtfeger, Carl Richard
PA USA
SO U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005066878	A1	20050331	US 2003-671840	20030925
PRAI	US 2003-671840		20030925		
OS	MARPAT 142:347510				

L11 ANSWER 2 OF 2 USPATFULL on STN

AB The present invention provides a method for producing **Group III nitride** materials by converting a **Group III azide** of the formula:

$(R_1R_2N)2M_1N_3$

under conditions sufficient to produce a **Group III nitride** material of the formula:

M_1N

wherein

each of R_1 and R_2 is independently a **hydrocarbyl**; and

M_1 is a **Group III metal**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2005:78449 USPATFULL
TI Methods for producing **group III nitride** materials
IN Arent, Douglas Jay, Conifer, CO, UNITED STATES
Curtis, Calvin J., Lakewood, CO, UNITED STATES
Schwerdtfeger, Carl Richard, JR., Chagrin Falls, OH, UNITED STATES
PI US 2005066878 A1 20050331
AI US 2003-671840 A1 20030925 (10)
DT Utility
FS APPLICATION

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7TH STREET, MINNEAPOLIS, MN, 55402-3901
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN No Drawings
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L10 49687 S (HYDROCARBYL)
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